

What is claimed is:

1. A device to evaluate a fastener, the device comprising:
a cam that is contoured to correspond to a relationship between a first dimension of the fastener and a second dimension of the fastener, the cam being movable between a first position and a second position, wherein the fastener is evaluated based on whether an electrical connection is completed when contact occurs between the cam and the fastener while the cam is moved from the first position to the second position.
2. The device according to claim 1, further comprising;
a contact feeler disposed between the cam and the fastener to contact the fastener and complete the electrical connection when touching the cam.
3. The device according to claim 1, further comprising:
an indicator to emit a signal in response to the first dimension and the second dimension being between a minimum value and a maximum value.
4. The device according to claim 3, wherein the indicator emits a visual signal.
5. The device according to claim 3, wherein the indicator emits an auditory signal.

6. The device according to claim 1, further comprising:
a plurality of cams contoured to correspond to respective relationships between a plurality dimensions of the fastener, each of the plurality of cams being movable between a respective first position and a respective second position, wherein the fastener is evaluated based on whether the electrical connection is completed when contact occurs between the plurality of cams and the fastener while the cams are moved from the respective first positions to the respective second positions.
7. The device according to claim 6, further comprising:
an axle about which the cams rotate from the respective first positions to the respective second positions.
8. The device according to claim 1, further comprising:
a processor to determine whether the electrical connection has been completed.
9. The device according to claim 8, further comprising:
an actuator to move the cam from the first position to the second position, the actuator being controlled by the processor.
10. The device according to claim 9, further comprising:
a placement sensor to sense whether the device is disposed upon the fastener, the processor receiving a signal from the placement sensor in response to the device being disposed upon the fastener, wherein the processor evaluates the fastener in response to receiving the signal.

11. A system to evaluate a fastener, the system comprising:
 - a device comprising:
 - a sensor comprising a cam contoured to correspond to a relationship between a first dimension of the fastener and a second dimension of the fastener, the cam being movable between a first position and a second position, wherein the fastener is evaluated based on whether an electrical connection is completed when contact occurs between the cam and the fastener while the cam is moved from the first position to the second position; and
 - a processor to receive signals from the sensor, the processor determining whether the first dimension and the second dimension are between a first value and a second value.
12. The system according to claim 11, further comprising:
 - a contact feeler disposed between the cam and the fastener to contact the fastener and complete the electrical connection when touching the cam.
13. The system according to claim 11, further comprising:
 - an indicator to emit a signal in response to the first dimension and the second dimension being between a minimum value and a maximum value.
14. The system according to claim 13, wherein the indicator emits a visual signal.
15. The system according to claim 13, wherein the indicator emits an auditory signal.

16. The system according to claim 11, further comprising:
a plurality of sensors, each sensor having a respective cam contoured to correspond to respective relationships between a plurality dimensions of the fastener, each of the plurality of cams being movable between a respective first position and a respective second position, wherein the fastener is evaluated based on whether an electrical connection is completed when contact occurs between the respective cam and the fastener while the cams are moved from the respective first positions to the respective second position.
17. The system according to claim 16, further comprising:
an axle about which the cams rotate from the respective first positions to the respective second positions.
19. The system according to claim 11, further comprising:
an actuator to move the cam from the first position to the second position, the actuator being controlled by the processor.
20. The system according to claim 11, further comprising:
a placement sensor to sense whether the device is disposed upon the fastener, the processor receiving a signal from the placement sensor in response to the device being disposed upon the fastener, wherein the processor evaluates the fastener in response to receiving the signal.
21. The system according to claim 11, further comprising:
a memory to store data associated with fastener evaluation.
22. The system according to claim 11, further comprising:
a network to connect the processor to a database.

23. An apparatus for evaluating a fastener installed in a substrate, the fastener having a height relative to the substrate, the apparatus comprising:
- means for sensing the height;
 - means for sensing a feature of the fastener; and
 - means for determining whether the feature is between a first value and a second value in response to the sensed height.
24. The apparatus according to claim 23, further comprising:
- means for turning on an indicator means in response to the feature being between the first value and the second value.
25. The apparatus according to claim 23, wherein the means for sensing the height further comprises:
- means for completing an electrical circuit in response to a camming means contacting the fastener, the cam being contoured to correspond to a relationship between the height and the feature of the fastener
26. The apparatus according to claim 25, wherein the determining step further comprises:
- means for rotating the cam about an axis.
27. The apparatus according to claim 23, further comprising:
- means for storing the determination to a memory means.
28. The apparatus according to claim 23, further comprising:
- means for forwarding the determination across a network means to a network enabled device means.

29. A method of evaluating a fastener installed in a substrate, the fastener having a height relative to the substrate, the method comprising:

sensing the height;

sensing a feature of the fastener; and

determining whether the feature is between a first value and a second value in response to the sensed height.

30. The method according to claim 29, further comprising:

turning on an indicator in response to the feature being between the first value and the second value.

31. The method according to claim 29, wherein the step of sensing the height further comprises:

completing an electrical circuit in response to a cam contacting the fastener, the cam being contoured to correspond to a relationship between the height and the feature of the fastener

32. The method according to claim 31, wherein the determining step further comprises: rotating the cam about an axis.

33. The method according to claim 29, further comprising:

storing the determination to a file.

34. The method according to claim 29, further comprising:

forwarding the determination across a network to a network enabled device.

35. A method of generating a probe to evaluate a fastener, the fastener including a plurality of dimensions, the method comprising:

determining a set of relationships for the plurality of dimensions;

generating a table based on the set of relationships, the table having a plurality of columns and a plurality of rows, wherein each column corresponds to a dimension of the plurality of dimensions and each row corresponds to the relationship between the plurality of dimensions at a particular value;

shaping a cam, wherein a contour of the cam corresponds to a column of the plurality of columns.

36. The method according to claim 35, further comprising:

shaping a plurality of cams, a respective contour of each cam corresponding to a respective column of the plurality of columns.

37. The method according to claim 36, further comprising:

mounting the plurality of cams on a camshaft, wherein the plurality of cams are oriented so that the plurality of respective contours correspond to the plurality of rows.